

## REMARKS

Claims 1-11 are pending. Claims 12-20 were allowed. Claims 1, 3, 5, and 8-11 were rejected as under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Takeuchi (6,289,046). Claims 2, 4, 6, and 7 were objected to but would be allowable if rewritten in independent form including all intervening limitations. The allowance of claims 12-20 and the allowability of claims 2, 4, 6, and 7 is gratefully acknowledged.

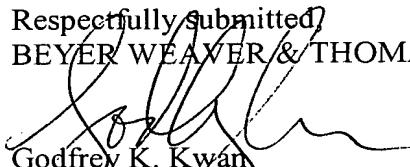
Independent claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Takeuchi. The Examiner argues that Takeuchi teaches providing gradient elements for computing coefficient multipliers. However, the Applicants disagree that it would be obvious to combine the teaching of Takeuchi with the admitted prior art. Claim 1 recites “a first output delay line configured to ... provide a first gradient element for computing a first coefficient multiplier.” Claim 1 also recites “a second output delay line configured to ... use the first coefficient multiplier.” The inventors of the present application are believed to be the first to contemplate a second output delay line using “the first coefficient multiplier” computed from the first output delay line.

Takeuchi does not provide a motivation to have a second output delay line configured to use the first coefficient multiplier. Takeuchi only shows a single output delay line in Figure 16 cited by the Examiner. Takeuchi also shows only a single output delay line in all of its Figures and does not anywhere mention any benefits of having multiple output delay lines. Takeuchi instead goes into detail talking about updating tap coefficients using the mean value of instantaneous gradient vectors on a single output delay line. This would seem to teach away from using “a first output delay line ... for computing a first coefficient multiplier” and a “second output delay line” for using the first coefficient multiplier. The admitted prior art also does not provide any motivation to combine. The admitted prior art states that “However, in the distributed-amplifier-based AFIR equalizer shown in Figure 3, the gradient elements  $x_{ki}$  associated with the gradient vector  $X_k$  are not readily available.” “Typical implementations precalculate or empirically determine coefficient multipliers and pre-program them into the equalization circuitry.” (page 11, line 24 – page 12, line 9)

In light of the above remarks, the rejections to the independent claims are believed overcome for at least the reasons noted above. Applicants believe that all pending claims are

allowable in their present form. Please feel free to contact the undersigned at the number provided below if there are any questions, concerns, or remaining issues.

Respectfully submitted  
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**IN THE DRAWINGS**

The Examiner objected to Figures 2 and 3 in the drawings and argues that the expression “prior art” should be informalities in the specification. Replacements sheets for Figure 2 and 3 with the label “prior art” are being provided with the current response.